WHAT IS CLAIMED IS:

1. A positive-working photoresist composition which comprises, as a uniform solution in an organic solvent:
(A) 100 parts by weight of a hydroxystyrene-based polymer having phenolic hydroxyl groups or carboxyl groups as a resinous base ingredient of which at least a part of the phenolic hydroxyl groups or carboxyl groups are substituted for the hydrogen atoms thereof by acid-dissociable groups;
(B) from 1 to 20 parts by weight of a radiation-sensitive acid-generating compound;
(C) from 0.1 to 25 parts by weight of a polyvinyl ether compound susceptible to crosslinking;
(D) from 0.01 to 5 parts by weight of a carboxylic acid consisting of atoms of carbon, oxygen and hydrogen alone; and
(E) from 0.01 to 1 part by weight of an amine compound.

2. The positive-working photoresist composition as claimed in claim 1 in which the acid-dissociable group in the component (A) is selected from the group consisting of alkoxyalkyl groups, tertiary alkoxycarbonyl groups, tertiary alkoxycarbonylalkyl groups, tertiary alkyl groups and cyclic ether groups.

3. The positive-working photoresist composition as claimed in claim 2 in which the component (A) is a combination of:
(A1) a first polyhydroxystyrene resin of which a part of the phenolic hydroxyl group are substituted for the hydrogen atoms thereof by alkoxyalkyl groups; and
(A2) a second polyhydroxystyrene resin of which a part of the phenolic hydroxyl group are substituted for the hydrogen atoms thereof by acid-dissociable groups selected from the group consisting of tertiary alkoxycarbonyl groups, tertiary alkyl groups and cyclic ether groups.

4. The positive-working photoresist composition as claimed in claim 3 in which the weight proportion of the first

polyhydroxystyrene resin (A1) to the second polyhydroxystyrene resin (A2) is in the range from 2:8 to 9:1.

5. The positive-working photoresist composition as claimed in claim 1 in which the polyvinyl ether compound as the component (C) is a compound represented by the general formula

$$X(-O-CH=CH_2)_n \ ,$$

in which the subscript n is a positive integer of 2, 3 or 4 and X is an n-valent organic residue.

6. The positive-working photoresist composition as claimed in claim 5 in which the n-valent organic residue denoted by X is a residue derived from a molecule of an aliphatic hydrocarbon compound or an alicyclic hydrocarbon compound by eliminating n hydrogen atoms.

7. The positive-working photoresist composition as claimed in claim 1 in which the carboxylic acid as the component (D) is selected from the group consisting of aliphatic carboxylic acids, alicyclic carboxylic acids and aromatic carboxylic acids.

8. The positive-working photoresist composition as claimed in claim 7 in which the carboxylic acid as the component (D) is maleic acid, malonic acid, dodecanoic acid or salicylic acid.

9. The positive-working photoresist composition as claimed in claim 1 in which the amine compound as the component (E) is a secondary or tertiary aliphatic amine compound.

10. The positive-working photoresist composition as claimed in claim 9 in which the amine compound as the component (E) is a secondary or tertiary alkanol amine compound.

11. A method for the formation of a patterned resist layer on the surface of a substrate which comprises the steps of:
(a) coating the surface of a substrate with the positive-working photoresist composition defined in Claim 1 followed by

drying to form a dried photoresist layer;
(b) exposing the dried photoresist layer on the substrate surface pattern-wise to light to form a latent image of the pattern;
(c) subjecting the photoresist layer after pattern-wise light exposure to a heat treatment;
(d) subjecting the photoresist layer to a development treatment with an aqueous alkaline solution as a developer to form a patterned resist layer; and
(e) subjecting the patterned resist layer to a heat treatment to effect diminution of the pattern size by thermal flow of the resist layer.

12. The method for the formation of a patterned resist layer as claimed in claim 11 in which the patterned resist layer exhibits a diminishing change in a dimension by increasing the temperature by an amount not exceeding 15 nm per degree centigrade of the temperature change.